region between the ends of the electrodes 3, a heat dissipation region can no longer be guaranteed. The heat dissipation region causes temperature to fall from approximately 2500°C at the high temperature region at the periphery of the arc to approximately 1000°C at the quartz glass tube wall. The extent of electrical ionization is therefore reduced due to the arc being cooled by the tube wall, which causes instability and makes it easy for the arc to disappear. The quartz glass tube wall is therefore subjected to overheating. In addition, a chemical reaction may take place between the metal halides and the quartz glass tube wall, and evaporation of the silica may cause devitrification or melting of the arc tube itself.

Please replace the paragraph at page 13, line 20 to page 14, line 2 with the following paragraph:

By selecting metal composing the low melting point metal halides with ionizing potentials in a range of 5.5eV to 6.5eV, highly efficient emission of light is not hindered from the start of sodium and scandium emissions due to the increased temperature of the arc tube, and emissions from metals composing the low melting point metal halides can be attenuated. This is because a phenomena is utilized where, when a plurality of gas atoms or molecules with differing ionizing potentials are present, the molecules or atoms with the smaller ionizing potentials are ionized or recombined, or energized and recombined, and thermal energy of the arc plasma is converted to and emitted as light, whereas it is relatively difficult to make atoms or molecules with a high ionizing potential emit light.

Please replace the paragraph at page 14, ll. 3-6 with the following paragraph:

It is preferable for the ionizing potential of metal composing the low melting point metal halide to be between that of sodium (5.14eV) and scandium (6.54eV) in order to emit a certain amount of light when the arc tube 1 is operating in a stable manner, with 5.5 to 6.5eV being preferred. Either of indium (5.79eV) or gallium (6.00eV) would satisfy this condition.

Please replace the paragraph at page 15, ll. 15-19 with the following new paragraph:

When the mole ratio of the low melting point metal halide to the scandium halide is less than 0.5, the start-up characteristics and color of light emitted do not improve sufficiently. When this mole ratio is greater than 3.0, light emitted by metals comprising the low melting point metal halide becomes predominant, causing the light emitted to deviate from the desired color range and causing the visible light emitting efficiency to noticeably drop.

Please replace the last paragraph on page 20 with the following new paragraph:

FIG. 10 is a longitudinal side view of a headlamp 11 in which the metal halide lamp 10 of the invention is employed as a light source for the vehicle headlamp 11 such as used in an automobile. The headlamp 11 lights up the path in front of the vehicle by reflecting light from the metal halide lamp 10 by a reflector 12 located on a horizontal axis Z so that the reflected light projects towards the front and passes through an outer lens 13. An inner lens 14 can be used to refract light from the reflector 12 downwards and for diffusing this light to the left and right. When the inner lens 14 is in the substantially vertical position, the light distribution is suitable for passing other vehicles (low beam mode), with the area close to the front of the

vehicle primarily being lit up. When the inner lens 14 is rotated upwards so as to be substantially horizontal, areas at a distance from the front of the vehicle can be lit up (high beam mode).